

**Comments and Responses to the Hanford Facility Dangerous Waste
Closure Plan
241-Z Treatment and Storage Tanks**

Commenter: Ken Niles, Assistant Director, Oregon Department of Energy (May 21, 2004)

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Comment 1: Page 6-2, Line 34; Closure Standards for Underlying Soil states that the concrete of the tank vaults will be inspected and if it is intact, the underlying soil will be assumed to be uncontaminated. We disagree. Concrete is a porous material and it is possible for contaminants to diffuse through the concrete into the soil. In addition, the sumps in each vault are below floor level and there is no specific mention anywhere in this document of examining them for potential leakage. We recommend that as a minimum, the concrete be sampled to determine if it is contaminated, and sumps be examined in detail for contamination and potential leakage. If the concrete or the sumps is found to be contaminated, the soil under the vaults should be sampled to verify its condition.

Response to Comment 1: Secondary containment requirements for RCRA tank systems are primarily met through the use of engineered concrete surfaces because such surfaces are recognized as effective in containing spills and preventing spills from reaching soils. The 241-Z vault cells (approximately 15 inches of reinforced concrete) provide a degree of containment, also. Inspection of concrete containment surfaces for integrity (i.e., significant cracks) verifies the absence of a pathway to soils for RCRA constituents and is appropriate and consistent with the closure of other permitted Hanford Site RCRA TSD units. The sumps are an integral part of the vault floors and will be inspected as a portion of the floor surfaces. Note: Due to non-RCRA spills, soils under this unit have been identified for evaluation and disposition under a future CERCLA Remedial Action.

Sampling of concrete surfaces is unnecessary and adds cost without added benefit to human health and the environment. The concrete containment is known to have contacted waste and so will be cleaned for closure. Cleaning will remove the unit's waste characteristics of toxicity (due to heavy metals and carbon tetrachloride) or corrosivity (due to dilute acids). Because the concrete's recognized ability to contain spills, sampling of concrete surfaces is a poor indicator of possible soil contamination. Because the concrete surface will be cleaned, the recommended sampling is not necessary.

Recommended closure plan text changes: None

Comment 2: Page 7-4, line 26; an assumption is made about the preparations made in the past to paint the tank, and from there the tank is assumed to be uncontaminated. There is no objective evidence for the validity of these assumptions. We recommend that the surface of the tank be sampled to determine its actual contamination

Response to Comment 2: Subject tank D-8 was installed in 1949. It is reasonable to assume that prior to being painted in 1992 (after 40 years of operations) the tank would require cleaning to remove dirt, oil (from equipment), and waste residues so that the paint could adhere. The fact that the paint did adhere and has remained intact since 1992 demonstrates that the tank surface was appropriately prepared for painting (i.e., cleaned). Given the characteristic nature of this waste, even nominal cleaning of the tank prior to painting would have reduced the quantity of waste residues on tank surfaces to well below cleanup levels (waste designation levels for characteristic waste). Note: This tank (and most 241-Z materials) will always, at a minimum, be

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managed as low-level waste due to radiological contamination that will remain after RCRA closure.

Sampling of the tank surface is not necessary and would add cost without added benefit to human health and the environment. The exterior and interior surfaces of tank D-8 will be cleaned for closure to remove characteristic waste residues thereby eliminating the need for the recommended sampling of the tank surface.

Recommended Closure Plan text changes: None

Comment 3: Page 7-5, line 42, assumes no void spaces will be discovered when the bases of the tanks are examined. There is no contingency plan discussed in the event that void spaces are discovered during these examinations. We recommend that this eventuality be discussed and planned for in this document.

Response to Comment 3: A discussion of all potential discrepant conditions that could be found during closure (e.g., cracks or potential void spaces) is not necessary. All potential contamination conditions found during closure inspections will be noted in the closure field logbook and on the appropriate inspection checklist. Ecology will be monitoring the inspection process to ensure that all potential contamination conditions are noted. Also, at the completion of closure activities, Ecology and the certifying Professional Engineer will review all inspection documentation as a portion of the official closure record to ensure that all noted contamination has been properly dispositioned.

Recommended Closure Plan text changes: None

Comment 4: Page 7-6, line 6; the assumption is made that if no cracks exist at the edge of the tank support pad, there are no cracks in the interior of the support pad. This is inconsistent with the previous implicit assumption concerning the integrity of the concrete vaults where it was assumed that cracks would not necessarily propagate through the entire thickness of the concrete (see earlier comment). We recommend that the interior of the support pad be examined, possibly by ultrasonic methods, to verify the integrity of this structure.

Response to Comment 4: Only the outside ends of the tank support pads are accessible for inspection. Tank-support pads are approximately 6" thick concrete and sit on the cell floor that is nominally 6" concrete or more. Access to the entire concrete support pad perimeter is anticipated. Given the construction and age of the concrete, if significant cracks have not propagated to the visible edges of the tank support pads, then non-visible cracks are unlikely.

Recommended testing (e.g., ultrasonic testing) is not feasible. The tank/pad configuration is not amenable to the proposed testing and would likely not result in meaningful data. In addition, any testing would require entering the confined and radiologically contaminated tanks that based on ALARA will not be entered. Further, such testing would most likely see variations in the layer of leveling grout (not the structural concrete) that has no bearing on soil closure that is the subject of the referenced text.

Recommended Closure Plan text changes: None

Commenter: Gordon Smith, 8029 Meridian N., Seattle WA, 98103 (April 16, 2004)

Comment 1: Dear Officials, I receive DOE updates on Hanford Cleanup & try to understand what they tell me. I just want to respond to an article I read in the Seattle PI stating that the DOE under Bush wanted to recharacterize large amounts of waste, bury it under concrete & declare it cleaned up. Why bother with the concrete? Good Grief. I am opposed to anything short of the most thorough cleanup possible. We owe it to the future. Please pursue this approach. I'm watching. [signed] Gordon Smith.

Response to Comment 1: *The Seattle PI* editorial (April 12, 2004) you reference refers to the underground storage tanks (part of the Hanford Tank Farms) that still contain large amount of liquid waste. The 241-Z Treatment and Storage Tanks are part of the Plutonium Finishing Plant complex. This plan focuses on the cleanup (removal and disposal) of any waste that may be contained in those tanks. The goal is the cleanup of the tanks, associated structures and equipment so that they are in an environmentally safe condition requiring minimal maintenance.

Recommended Closure Plan text changes: None